REMARKS

In view of the following remarks, Applicants respectfully request reconsideration and allowance of the subject application. This Response is believed to be fully responsive to all issues raised in the Office action mailed 10/07/2005 (hereinafter "the present Office action").

Claim Rejections

35 USC §102(e)

Claims 1 – 28 stand rejected under 35 USC §102(e) as being anticipated by U.S. Patent 6,909,700 to Benmohamed et al. (hereinafter "Benmohamed").

Claim 1 reads as follows:

> 1. A method comprising:
>
> determining a first cost associated with a logical network link between an active node and a first neighboring node of the active node within an overlay network;
>
> determining a second cost associated with a proposed logical network link between the first neighboring node and a second neighboring node of the active node within the overlay network; and
>
> reorganizing the overlay network to replace the logical network link with the proposed logical network link in the overlay network with a reorganization probability based on the first and second costs and the degrees of the nodes.

In rejecting claims 1, 10, and 19 the Office stated:

> As concerns claims 1, 10 and 19, determining a first cost associated with a logical network link between an active node (column 3, lines 39-40) and a first neighboring node of the active node within an overlay network; determining a second cost associated with a proposed logical network link between the first neighboring node and a second neighboring node of the active node within the overlay network; and reorganizing the overlay network

to replace the logical network link with the proposed logical network link in the overlay network with a reorganization probability based on the first and second costs and the degrees of the nodes (column 5, lines 12-32).

Column 5, lines 12 – 32 of Benmohamed read as follows:

> Referring to FIG. 2, one embodiment of a general design algorithm **200** of the system proceeds as follows. First, the traffic mix F_l at each link is computed (by routing processor **12**) based on an initial network topology G_s (from optimization processor **18**) which is a subgraph of G, the routing algorithm R, the link metric vector {right arrow over (l)}, and the set of IP demands F (step **202**). Second, the capacity of each link required to satisfy the bandwidth demands in F_l is computed (by link capacity requirements processors **14** and **16**) based on the type(s) of routers in the network, the different assumptions on congestion scenario, and in some cases the end-to-end delays of the TCP demands (step **204**). Third, the design system determines whether the final network design (by optimization processor **18**) is obtained (step **206**). If not, in step **208**, the network topology is perturbed (by optimization processor **18**) and the new network cost is evaluated in accordance with steps **202** and **204**. This design iteration is then repeated until the final network design is obtained. The results of the final design are output (step **210**), e.g., in the form of information displayed to the user of the design system, including: (1) the vector {right arrow over (C)}; (2) the route of each traffic flow f_i; and (3) the corresponding network cost.

Applicants respectfully disagree with the Office's contention that Benmohamed anticipates claim 1, for at least the following reasons. Applicants have thoroughly reviewed Benmohamed, including the above-cited portion, and can find no teaching therein of "reorganizing the overlay network to replace the logical network link with the proposed logical network link in the overlay network with a reorganization probability based on the first and second costs and the degrees of the nodes," as recited in claim 1. Replacing a logical network link with a proposed logical network link based on a reorganization probability is simply never

discussed in Benmohamed. Reorganization probabilities are simply never discussed in Benmohamed. (See pages 7 – 9 of the present application for a discussion of reorganization probabilities). Further, there is no discussion whatsoever in Benmohamed of using the degrees of a node in any calculation or action, whether for determining a probability or for any other purpose. (As noted on page 3, lines 8 – 9 of the present application, the degree of a node refers to the size of the nodes neighbor list.).

If the Office disagrees, Applicant's respectfully request that the Office indicate with particularity where use of a reorganization probability, including use of the degrees of nodes, as recited in claim 1, is discussed in Benmohamed.

As noted in MPEP § 2131, "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (citations omitted). As noted, Benmohamed does not describe all of the limitations of claim 1. For at least this reason, Benmohamed fails to anticipate claim 1. Claim 1 is believed to be in condition for allowance, and such allowance is respectfully requested.

Each of **claims 5 – 9** depends in some form from claim 1 and, therefore, includes all the limitations of claim 1. As such, each of claims 5 – 9 is believed to be patentable over Benmohamed, for at least the reasons set forth above with respect to claim 1. Each of claims 5 – 9 also recites additional features that, together with the limitations of claim 1, define features that are not taught by Benmohamed. Claims 5 – 9 are believed to be in condition for allowance, and such allowance is respectfully requested.

Claim 10 reads as follows:

> 10. A computer program product encoding a computer program for executing on a computer system a computer process, the computer process comprising:
>
> determining a first cost associated with a logical network link between an active node and a first neighboring node of the active node within an overlay network;
>
> determining a second cost associated with a proposed logical network link between the first neighboring node and a second neighboring node of the active node within the overlay network; and

reorganizing the overlay network to replace the logical network link with the proposed logical network link in the overlay network with a reorganization probability based on the first and second costs and the degrees of the nodes.

Claim 10 is directed to a computer program product encoding a computer program for executing on a computer system a computer process including operations that are identical to the operations recited in claim 1. Therefore, claim 10 is believed to be allowable over Benmohamed for at least the reasons set forth above with respect to claim 1.

Each of **claims 11 – 18** depends in some form from claim 10 and, therefore, includes all the limitations of claim 10. As such, each of claims 11 – 18 is believed to be patentable over Benmohamed for at least the reasons set forth above with respect to claim 10. Each of claims 11 – 18 also recites additional features that, together with the limitations of claim 10, define features that are not taught by Benmohamed. Claims 11 – 18 are believed to be in condition for allowance, and such allowance is respectfully requested.

Claim 19 reads as follows:

19. A system comprising:

a cost computing module determining a first cost associated with a logical network link between a active node and a first neighboring node of the active node within an overlay network and determining a second cost associated with a proposed logical network link between the first neighboring node and a second neighboring node of the active node within the overlay network; and

a reorganization module reorganizing the overlay network to replace the logical network link with the proposed logical network link in the overlay network with a reorganization probability based on the first and second costs and the degrees of the nodes.

Claim 19 recites, among other things, a reorganization module reorganizing the overlay network to replace the logical network link with the proposed logical network link in the overlay

network with a reorganization probability based on the first and second costs and the degrees of the nodes. As described above with respect to claim 1, Applicants have reviewed Benmohamed in detail and can find no discussion therein of reorganizing a overlay network to replace the logical network link with the proposed logical network link in the overlay network with a reorganization probability based on the first and second costs and the degrees of the nodes. Replacing a logical network link with a proposed logical network link based on a reorganization probability is simply never discussed in Benmohamed. (See pages 7 – 9 of the present application for a discussion of reorganization probabilities). This functionality is simply never disclosed or suggested in Benmohamed, either by a reorganization module or by any other mechanism. Therefore, claim 19 is believed to be allowable over Benmohamed for at least the reasons set forth above with respect to claim 1.

Each of **claims 20 – 28** depends in some form from claim 19 and, therefore, includes all the limitations of claim 19. As such, each of claims 20 – 28 is believed to be patentable over Benmohamed, for at least the reasons set forth above with respect to claim 19. Each of claims 20 – 28 also recites additional features that, together with the limitations of claim 19, define features that are not taught by Benmohamed. Claims 20 – 28 are believed to be in condition for allowance, and such allowance is respectfully requested.

CONCLUSION

In view of all the foregoing, it is submitted that the pending claims of the present application are all in condition for allowance and such allowance is earnestly solicited. In the event that there are any outstanding matters remaining in the present application, the Office is invited to contact the undersigned to discuss the matters.

No extensions of time or additional fees are believed to be due with respect to the submission of this Amendment. However, if an extension of time is deemed necessary, Applicants hereby request such extension of time and authorize the Office to charge any associated fees to Deposit Account No. 50-0463.

Respectfully submitted,

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